

ADDITIONAL OBSERVATIONS ON THE ASSOCIATION OF *PEDILUS* (PEDILIDAE) WITH *MELOE* (COLEOPTERA: MELOIDAE)^{1,2}

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ABSTRACT: Three specimens of *Pedilus collaris* (Say) were observed in association with a male *Meloe angusticollis* Say. Two of the beetles were firmly attached to *Meloe* abdominal tergites but were producing little or no obvious damage.

Recently, LeSage and Bousquet (1983) reviewed reports of *Pedilus* - *Meloe* associations and described their observations of *P. lugubris* (Say) chewing *Meloe* elytra.

On April 27, 1979 I observed an association between *Pedilus* and *Meloe* near the unincorporated community of Triune, 21 km south of Morgantown, West Virginia. The habitat was a steep hillside in a typical Eastern cove of hardwood forest (oak, hickory, maple).

A male *Meloe angusticollis* Say was observed resting on the edge of a fallen dead white oak leaf. Two male *Pedilus collaris* (Say) were firmly attached by their mandibles to the second and third abdominal tergites of the *Meloe* with their legs drawn up below their bodies. A third male *P. collaris*, which was crawling over leaf litter and dead twigs about 23 cm away, oriented to the leaf on which *Meloe* was resting. The leaf was reached by means of an indirect route of about 64 cm utilizing small twigs as "bridges" to the leaf. Once on the leaf, the *Pedilus* walked directly to the *Meloe* and attempted to crawl onto it at the abdominal apex. When touched by the third pedilid, the *Meloe* rapidly jerked forward and began walking over the forest floor directly away from the *Pedilus*.

After observing the blister beetle walk over a distance of about one meter, I collected the *Meloe* and two pedilids and placed them in a plastic bag together with leaves and twigs. The captive *Meloe* moved actively and frequently crawled upside down on the twigs. At these times, the pedilids hung freely by their mandibles. The pedilids detached about 10 hours later and apparently were no longer attracted by the *Meloe*. Examination of the meloid's abdominal tergites showed only very small scratches on their posterior margins.

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These observations gave no indication of pedilid feeding on *Meloe*. *Meloe* specimens in the West Virginia University Collection also show no damage such as that described by LeSage and Bousquet (1983). I agree with these authors that the phenomenon of elytral chewing by pedilids may be uncommon.

The two attached pedilids in the current study held firmly to the *Meloe*, but appeared to be carried passively, generally not even clinging with the legs. This type of behavior is suggestive of that demonstrated by many groups of phoretic arthropods. It is unlikely, however, that beetles as relatively mobile as pedilids would benefit from phoresy on another insect, especially one as sluggish as the flightless *Meloe*.

The behavior of the unattached pedilid indicated that it was detecting *Meloe* from a distance and was strongly attracted to it. While visual orientation may have been important, the possibility of chemical attraction seems more likely. A chemical of obvious consideration is cantharadin, the allomone secreted by meloid beetles when disturbed. Pedilid orientation to *Meloe* chemicals might be for any of a number of purposes: protection from natural enemies by means of *Meloe's* repellent fluid; attraction to the chemical for feeding; or use of *Meloe* as an aggregation site for mating. Another possibility is that pedilids as larvae or adults associate in some fashion with *Meloe* eggs. These suggestions can be only speculative at this point.

LITERATURE CITED

LeSage, L. and Y. Bousquet. A new record of attacks by *Pedilus* (Pedilidae) on *Meloe* (Meloidae: Coleoptera). Ent. News 94: 95-96.

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